Amendments to the Claims:

This listing of claims will replace all prior versions, and listing, of claims in the above-identified application.

Listing of Claims:

1. (Previously Presented) A method of forming an electrochemical cell, the method comprising contacting a negative pole layer and a positive pole layer one with the other, wherein contacting causes components in electrolyte solution in negative pole layer and components in electrolyte solution in positive pole layer to interact and/or react with each other and self-form an interfacial separator layer within an electrolyte layer between said negative and positive poles.

2. (Previously Presented) The method according to claim 1, wherein said electrolyte solution in said negative pole layer and electrolyte solution in said positive pole layer are selected such that said electrochemical cell is sufficiently deliquescent for keeping said pole layers generally wet and sufficiently electroactive for obtaining ionic conductivity between said pole layers.

3. (Original) The method according to claim 1, wherein said interfacial separator layer comprises a polymer precipitate or a gel.

4. (Original) The method according to claim 1, wherein said interfacial separator layer self-forms via a physical interaction.

5. (Original) The method according to claim 4, wherein said physical interaction results in a formation of a polymer precipitate or a gel between said pole layers.

6. (Original) The method according to claim 1, wherein said interfacial separator layer self-forms via a chemical reaction.

7. (Original) The method according to claim 6, wherein said chemical reaction results in a formation of a polymer precipitate or a gel between said pole layers.

8. (Original) The method according to claim 1, wherein said interfacial separator layer self-forms via a physical interaction between at least one polymer and at least one polymer precipitating agent.

9. (Original) The method according to claim 1, wherein said interfacial separator layer self-forms via a physical interaction between at least one polymer and at least one electrostatic cross-linking agent.

10. (Original) The method according to claim 1, wherein said interfacial separator layer self-forms via a physical interaction between at least two polymers.

11. (Original) The method according to claim 10, wherein said physical interaction between said at least two polymers is selected from the group consisting of an electrostatic interaction and a non-electrostatic interaction.

12. (Original) The method according to claim 11, wherein said non-electrostatic interaction is selected from the group consisting of hydrogen bonding interaction and van-der-Waals interaction.

13. (Original) The method according to claim 1, wherein said interfacial separator layer self-forms via a physical interaction between at least two polymers and at least one activator.

14. (Original) The method according to claim 13, wherein said at least one activator is selected from the group consisting of zinc chloride and H_3O^+ ions.

15. (Original) The method according to claim 1, wherein said interfacial separator layer self-forms via a chemical reaction between at least one polymerizable unit and at least one polymerization activator.

16. (Previously Presented) The method according to claim 1, wherein at least one of said pole layers includes a material that is both deliquescent and electroactive.

17. (Original) The method according to claim 16, wherein said material includes zinc chloride.

18. (Original) The method according to claim 1, wherein said positive pole layer includes manganese dioxide powder and said negative pole layer includes zinc powder.

19. (Original) The method according to claim 18, wherein said negative pole layer further includes carbon powder.

20. (Original) The method according to claim 18, wherein said positive pole layer further includes carbon powder.

21. (Original) The method according to claim 8, wherein said at least one polymer includes poly(vinyl pyrrolidone) (PVP).

22. (Original) The method according to claim 8, wherein said at least one polymer precipitating agent includes zinc chloride.

23. (Original) The method according to claim 21, wherein said at least one polymer precipitating agent includes zinc chloride.

24. (Original) The method according to claim 8, wherein said at least one polymer includes at least one polysaccharide.

25. (Original) The method according to claim 24, wherein said at least one polymer precipitating agent includes zinc chloride.

26. (Original) The method according to claim 24, wherein said at least one polysaccharide includes chitosan.

27. (Original) The method according to claim 9, wherein said at least one polymer includes at least one polysaccharide.

28. (Original) The method according to claim 27, wherein said at least one polysaccharide includes at least one carboxylated polysaccharide.

29. (Original) The method according to claim 27, wherein said at least one polysaccharide includes sodium alginate.

30. (Original) The method according to claim 27, wherein said at least one polysaccharide includes pectin.

31. (Original) The method according to claim 9, wherein said at least one electrostatic cross-linking agent includes zinc chloride.

32. (Original) The method according to claim 27, wherein said at least one electrostatic cross-linking agent includes zinc chloride.

33. (Original) The method according to claim 10, wherein at least one of said at least two polymers is poly(acrylic acid).

34. (Original) The method according to claim 33, wherein at least one of said least two polymers is a polymer selected from the group consisting of PVP, poly(vinyl alcohol), poly(ethylene oxide) and poly(ethyl oxazoline) (PEOx).

35. (Original) The method according to claim 13, wherein at least one of said at least two polymers is selected from the group consisting of poly(acrylic acid) and partially neutralized poly(acrylic acid).

36. (Original) The method according to claim 35, wherein said at least one activator is selected from the group consisting of zinc chloride and H_3O^+ ions.

37. (Original) The method according to claim 1, and further comprising providing at least one terminal in electrical contact with at least one of said pole layers.

38. (Previously Presented) The method according to claim 1, further comprising: applying at least one terminal to at least one pole layer via a printing technology, wherein said terminal is in electrical contact with said pole layer.

39. (Cancelled)

40. (Currently amended) An electrochemical cell comprising:

a negative pole layer;

a positive pole layer; and

an integral and in-situ formed interfacial separator layer interposed therebetween within an electrolyte layer, wherein said integral and in-situ formed interfacial separator layer is comprised of interaction and/or reaction products of components in electrolyte solution in negative pole layer and components in electrolyte solution in positive pole layer and wherein there is no separately added separator.

41. (Original) The cell according to claim 40, wherein at least said electrolyte solution in said negative pole layer and electrolyte solution in said positive pole layer are selected such that said electrochemical cell is sufficiently deliquescent for keeping said layers generally wet and sufficiently electroactive for obtaining ionic conductivity between said pole layers.

42. (Original) The cell according to claim 40, wherein said interfacial separator layer comprises a polymer precipitate or a gel.

43. (Original) The cell according to claim 40, wherein said interfacial separator layer self-forms via a physical interaction.

44. (Original) The cell according to claim 43, wherein said physical interaction results in a formation of a polymer precipitate or a gel between said pole layers.

45. (Original) The cell according to claim 40, wherein said interfacial separator layer self-forms via a chemical reaction.

46. (Original) The cell according to claim 45, wherein said chemical reaction results in a formation of a polymer precipitate or a gel between said pole layers.

47. (Original) The cell according to claim 40, wherein said interfacial separator layer self-forms via a physical interaction between at least one polymer and at least one polymer precipitating agent.

48. (Original) The cell according to claim 40, wherein said interfacial separator layer self-forms via a physical interaction between at least one polymer and at least one electrostatic cross-linking agent.

49. (Original) The cell according to claim 40, wherein said interfacial separator layer self-forms via a physical interaction between at least two polymers.

50. (Original) The cell according to claim 49, wherein said physical interaction between said at least two polymers is selected from the group consisting of an electrostatic interaction and a non-electrostatic interaction.

51. (Original) The cell according to claim 50, wherein said non-electrostatic interaction is selected from the group consisting of hydrogen bonding interaction and van-der-Waals interaction.

52. (Original) The cell according to claim 40, wherein said interfacial separator layer self-forms via a physical interaction between at least two polymers and at least one activator.

53. (Original) The cell according to claim 52, wherein said at least one activator is selected from the group consisting of zinc chloride and H_3O^+ ions.

54. (Original) The cell according to claim 40, wherein said interfacial separator layer self-forms via a chemical reaction between at least one polymerizable unit and at least one polymerization activator.

55. (Previously Presented) The cell according to claim 40, wherein at least one of said pole layers includes a material that is both deliquescent and electroactive.

56. (Original) The cell according to claim 55, wherein said material includes zinc chloride.

57. (Original) The cell according to claim 40, wherein said positive pole layer includes manganese dioxide powder and said negative pole layer includes zinc powder.

58. (Original) The cell according to claim 57, wherein said negative pole layer further includes carbon powder.

59. (Original) The cell according to claim 57, wherein said positive pole layer further includes carbon powder.

60. (Original) The cell according to claim 47, wherein said at least one polymer includes poly(vinyl pyrrolidone) (PVP).

61. (Original) The cell according to claim 47, wherein said at least one polymer precipitating agent includes zinc chloride.

62. (Original) The cell according to claim 60, wherein said at least one polymer precipitating agent includes zinc chloride.

63. (Original) The cell according to claim 47, wherein said at least one polymer includes at least one polysaccharide.

64. (Original) The cell according to claim 63, wherein said at least one polymer precipitating agent includes zinc chloride.

65. (Original) The cell according to claim 63, wherein said at least one polysaccharide includes chitosan.

66. (Original) The cell according to claim 48, wherein said at least one polymer includes at least one polysaccharide.

67. (Original) The cell according to claim 66, wherein said at least one polysaccharide includes at least one carboxylated polysaccharide.

68. (Original) The cell according to claim 66, wherein said at least one polysaccharide includes sodium alginate.

69. (Original) The cell according to claim 66, wherein said at least one polysaccharide includes pectin.

70. (Original) The cell according to claim 48, wherein said at least one electrostatic cross-linking agent includes zinc chloride.

71. (Original) The cell according to claim 66, wherein said at least one electrostatic cross-linking agent includes zinc chloride.

72. (Original) The cell according to claim 49, wherein at least one of said at least two polymers is poly(acrylic acid).

73. (Original) The cell according to claim 72, wherein at least one of said least two polymers is a polymer selected from the group consisting of PVP, poly(vinyl alcohol), poly(ethylene oxide) and poly(ethyl oxazoline) (PEOx).

74. (Previously Presented) The cell according to claim 52, wherein at least one of said at least two polymers is selected from the group consisting of poly(acrylic acid) and partially neutralized poly(acrylic acid).

75. (Previously Presented) The cell according to claim 74, wherein said at least one activator is selected from the group consisting of zinc chloride and H_3O^+ ions.

76. (Original) The cell according to claim 40, and further comprising at least one terminal in electrical contact with at least one of said pole layers.

77. (Previously Presented) The method of claim 1, wherein said electrolyte solution in negative pole layer and electrolyte solution in positive pole layer are comprised of aqueous electrolytes.

78. (Previously Presented) The method of claim 1, wherein there is no separately added separator.

79. (Previously Presented) The method of claim 1, wherein said electrolyte solution of said negative pole layer is different than said electrolyte solution of said positive pole layer.

80. (Previously Presented) The method of claim 1, wherein said electrolyte solution of said negative pole layer and said electrolyte solution of said positive pole layer are in a first physical state prior to contacting and a second physical state after contacting, wherein said first and second physical states are not the same or wherein said second state includes a mixture of physical states.

81. (Previously Presented) The method of claim 1, wherein said interfacial separator layer self-forms either as a gel or as a polymer precipitate.

82. (Previously Presented) The cell of claim 40, wherein said electrolyte solution in negative pole layer and electrolyte solution in positive pole layer are comprised of aqueous electrolyte solutions.

83. (Cancelled)

84. (Previously Presented) The cell of claim 40, wherein said electrolyte solution of said negative pole layer is different than said electrolyte solution of said positive pole layer.

85. (Previously Presented) The cell of claim 40, wherein said electrolyte solution of said negative pole layer and said electrolyte solution of said positive pole layer are in a first state prior to contacting and a second state after contacting, wherein said first and second states are not equal or wherein said second state is a mixture of at least said first state and said second state.

86. (Previously Presented) The cell of claim 40, wherein said interfacial separator layer was formed in-situ as a gel or as a polymer precipitate.

87. (Previously Presented) A method of forming an electrochemical cell, the method comprising contacting a negative pole layer to a first side of a thin layer, the thin layer having a first side and an opposing second side, contacting a positive pole layer to the second side of the thin layer, wherein contacting causes electrolyte solution in negative pole layer, electrolyte solution in positive pole layer, and electrolyte solution in the thin layer to self-form a first interfacial separator layer within an electrolyte layer between said negative pole and said first side of said thin layer and to self-form a second interfacial separator layer within an electrolyte layer between said positive pole and said second side of said thin layer.

88. (Previously Presented) The method of claim 87, wherein the first and second interfacial separators self-form at both the first and second sides of the thin layer and integrate into a single self-formed, interfacial separator layer disposed between the negative and positive pole layers.

89. (Previously Presented) An electrochemical cell comprising:

a negative pole layer including a first electrolyte solution;

a positive pole layer including a second electrolyte solution;

a thin layer having a first side and an opposing second side, said thin layer interposed between said negative and positive pole layers, wherein said first side of said thin layer is adjacent to said negative pole layer and said second side of said thin layer is adjacent to said positive pole layer;

an integral first interfacial separator layer within an electrolyte layer between said negative pole and said first side of said thin layer; and

an integral second interfacial separator layer within an electrolyte layer between said positive pole and said second side of said thin layer, wherein said first and second interfacial separator layers were formed in-situ.

90. (Previously Presented) The cell of claim 89, wherein said first and second interfacial separators are merged to form a continuous interfacial separator layer disposed between the negative and positive pole layers.

91. (Previously Presented) A method of forming an electrochemical cell, the method comprising inserting a thin layer solution between a negative pole layer and a positive pole layer, such that interaction and/or reaction between components in the thin layer, components in the electrolyte solution in the negative pole layer, and components in the electrolyte solution in the positive pole layer self-form an interfacial separator layer.

92. (Previously Presented) The method of claim 91 wherein the interfacial separator layer self forms as a gel or a precipitate.

93. (Previously Presented) The method of claim 91, wherein said thin layer is an aqueous solution.